

Appl. No. 10/711,412
Amdt. dated August 23, 2005
Reply to Office action of June 30, 2005

Amendments to the Claims:

Claim 1 (currently amended): A conductive structure comprising:

an integrated circuit;

5 a substrate; and

a plurality of bumps positioned in between the integrated circuit and the substrate
wherein at least one of the bumps comprises:

a first conductive part connected to the integrated circuit at one end;

a second conductive part connected to the integrated circuit at one end;

10 a conductive connection part connecting the first conductive part and the
second conductive part;

a first insulation part surrounding the first conductive part and the second
conductive part, wherein the height of the first conductive part and the second
conductive part is H1, the height of the conductive connection part is H2, the height
15 of the first insulation part is H3, and $H1 \leq H3 \leq H1+H2$; and

a second insulation part positioned in between the first conductive part and the
second conductive part.

Claim 2 (original): The conductive structure of claim 1 wherein an anisotropic conductive
20 film (ACF) is positioned in between the integrated circuit and the substrate for providing
an electrical connection between the conductive connection part and the substrate.

Claim 3 (cancelled)

25 Claim 4 (original): The conductive structure of claim 1 wherein the first conductive part
and the second conductive part comprise gold, nickel, gold alloy, or nickel alloy.

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Claim 5 (original): The conductive structure of claim 1 wherein the conductive connection part comprises gold or gold alloy.

5 Claim 6 (original): The conductive structure of claim 1 wherein the first insulation part and the second insulation part comprise light-isolating materials.

Claim 7 (original): The conductive structure of claim 6 wherein the light-isolating material of the first insulation part and the second insulation part is polyimide.

10 Claim 8 (original): The conductive structure of claim 1 wherein the first insulation part and the second insulation part are a monolithically-formed structure.

Claim 9 (original): The conductive structure of claim 1 wherein the first conductive part includes a first hollow section.

15 Claim 10 (original): The conductive structure of claim 1 wherein the second conductive part includes a second hollow section.

20 Claim 11 (original): The conductive structure of claim 1 wherein the first conductive part is a post.

Claim 12 (original): The conductive structure of claim 11 wherein the post is a triangular post, a tetragonal post, a polygonal post, a cylindrical post, or an elliptical post.

25 Claim 13 (original): The conductive structure of claim 1 wherein the second conductive part is a post.

Claim 14 (original): The conductive structure of claim 13 wherein the post is a triangular

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post, a tetragonal post, a polygonal post, a cylindrical post, or an elliptical post.

Claim 15 (original): The conductive structure of claim 1 wherein the first conductive part and the second conductive part are a monolithically-formed post.

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Claim 16 (original): The conductive structure of claim 15 wherein the post is a hollow post.

Claim 17 (original): The conductive structure of claim 16 wherein the second insulation part is located inside the hollow post.

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Claim 18 (original): The conductive structure of claim 17 wherein the hollow post includes an opening.

Claim 19 (original): The conductive structure of claim 18 wherein the first insulation part and the second insulation part are a monolithically-formed structure.

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Claim 20 (currently amended): A liquid crystal display comprising:

a substrate;

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a liquid crystal display region positioned in the center of the substrate;

an integrated circuit positioned on the edge of the substrate;

a plurality of bumps positioned in between the substrate and the integrated circuit for electrically connecting the integrated circuit; and

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an anisotropic conductive film for providing an electrical connection between the bumps and the substrate, wherein the plurality of bumps further comprises:

a first conductive part connected to the integrated circuit at one end;

a second conductive part connected to the integrated circuit at one end;

a conductive connection part connecting the first conductive part and the

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second conductive part;

a first insulation part surrounding the first conductive part and the second conductive part, wherein the height of the first conductive part and the second conductive part is H1, the height of the conductive connection part is H2, the height of the first insulation part is H3, and $H1 \leq H3 \leq H1+H2$; and

a second insulation part positioned in between the first conductive part and the second conductive part.

Claim 21 (cancelled):

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Claim 22 (original): The liquid crystal display of claim 20 wherein the first conductive part and the second conductive part comprises gold, nickel, gold alloy, or nickel alloy.

Claim 23 (original): The liquid crystal display of claim 20 wherein the conductive connection part comprises gold or gold alloy.

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Claim 24 (original): The liquid crystal display of claim 20 wherein the first insulation part and the second insulation part comprise light-isolating materials.

Claim 25 (original): The liquid crystal display of claim 20 wherein the light-isolating material of the first insulation part and the second insulation part is polyimide.

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Claim 26 (original): The liquid crystal display of claim 20 wherein the first insulation part and the second insulation part are a monolithically-formed structure.

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Claim 27 (original): The liquid crystal display of claim 20 wherein the first conductive part includes a first hollow section.

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Claim 28 (original): The liquid crystal display of claim 20 wherein the second conductive part includes a second hollow section.

5 Claim 29 (original): The liquid crystal display of claim 20 wherein the first conductive part is a post.

Claim 30 (original): The liquid crystal display of claim 29 wherein the post is a triangular post, a tetragonal post, a polygonal post, a cylindrical post, or an elliptical post.

10 Claim 31 (original): The liquid crystal display of claim 30 wherein the second conductive part is a post.

Claim 32 (original): The liquid crystal display of claim 31 wherein the post is a triangular post, a tetragonal post, a polygonal post, a cylindrical post, or an elliptical post.

15 Claim 33 (original): The liquid crystal display of claim 20 wherein the first conductive part and the second conductive part are a monolithically-formed post.

20 Claim 34 (original): The liquid crystal display of claim 33 wherein the post is a hollow post.

Claim 35 (original): The liquid crystal display of claim 34 wherein the second insulation part is located inside the hollow post.

25 Claim 36 (original): The liquid crystal display of claim 35 wherein the hollow post includes an opening.

Claim 37 (original): The liquid crystal display of claim 36 wherein the first insulation part

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and the second insulation part are a monolithically-formed structure.